6.P 1644

JUL 1 1 2002

TECH CENTER 1600/2900

Rev. 04/01

Docket No. A061CIP2

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants

Gregory R. Mundy and Toshiyuki Yone RECEIVED

Application No.:

10/086,217

Confirmation No.:

5114

Filed

For

February 21, 2002

METHODS OF TREATING MULTIPLE MYELOMA AND

MYELOMA-INDUCED BONE RESORPTION USING

INTEGRIN ANTAGONISTS

Group Art Unit :

1644

Examiner

Not yet assigned

New York, New York

July 1, 2002

Hon. Commissioner for Patents Washington, D.C. 20231

TRANSMITTAL LETTER FOR

<u>SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT</u>

Sir:

Transmitted herewith is a Supplemental Information
Disclosure Statement, PTO-1449 Form (in duplicate) and
documents cited therein. This Statement is submitted:

- [] within three months of the application filing date;
- [X] more than three months from the application filing date but before the mailing date of the first Office Action on the merits.

In accordance with 37 C.F.R. § 1.97, submission of this Statement requires no fee. However, if for any reason a fee is due, the Director is hereby authorized to charge

payment of any fees required in connection with this
Supplemental Information Disclosure Statement to Deposit
Account No. 06-1075. A duplicate copy of this letter is
transmitted herewith.

Respectfully

James F Haley, Jr. (Reg. No. 27,794)

Attorney for Applicants

Stanley D. Liang (Reg. No. 43,753)

submitt

Agent for Applicants

c/o FISH & NEAVE

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Tuly 1, 2002 Lillian Garcia

Signature of Person Signing



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SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT

Pursuant to 37 C.F.R. §§ 1.56 and 1.97, applicants, through their attorney and agent, make of record the following documents in the above-identified patent application, copies of which are submitted herewith:

UNITED STATES PATENTS

5,510,332 (Kogan et al.)

issued April 23, 1996

FOREIGN PATENT APPLICATIONS AND PUBLICATIONS

PCT publication WO 99/61421 Published December 2, 1999

PCT publication WO 00/15247 Published March 23, 2000

PCT publication WO 01/12186 Published February 22, 2001

OTHER REFERENCES

Masellis-Smith et al. "Adhesion of Multiple Myeloma Peripheral B Cells to Bone Marrow Fibroblasts: A Requirement for CD44 and $\alpha_4\beta_7$ ", <u>Cancer Research</u> 57(5): 930-936 (1997).

Roodman GD "Mechanisms of Bone Lesions in Multiple Myeloma and Lymphoma", <u>Database Medline 'Online!</u>: <u>US National Library of Medicine (NLM)</u>, <u>Bethesda, MD</u>, <u>US</u>, retrieved from STN, Database accession no. 1998026745, abstract.

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Akatsu et al. "Chinese Hamster Ovary Cells Expressing Alpha4beta1 Integrin Stimulate Osteoclast Formation In Vitro", <u>Database BIOSIS 'Online!</u>: <u>Biosciences Information Service</u>, <u>Philadelphia</u>, <u>PA</u>, <u>US</u> (August 1998) Database accession no. PREV199800429141, abstract.

Akatsu et al. "Chinese Hamster Ovary Cells Expressing $\alpha_4\beta_1$ Integrin Stimulate Osteoclast Formation In Vitro", <u>Journal of Bone and Mineral Research</u> 13 (8): 1251-1259 (1998).

Michigami et al. "Interactions of Myeloma Cells with Bone Marrow Stromal Cells via Alpha4 Beta1 Integrin – VCAM-1 is required for the Development of Osteolysis", <u>Database SCISEARCH 'Online!</u>, retrieved from STN, Database accession no. 684996.

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Mori et al. "Anti-α4 Integrin Antibody Suppresses the Bone Disease of Myeloma and Disrupts Myeloma-marrow Stromal Cell Interactions", <u>Journal of Bone and Mineral Research</u> 14 Supp. 1, p. S173, Abstract 1161 (1999).

REMARKS

The above-cited documents, with the exception of two (WO 00/15247 and WO 01/12186), were cited in the International Search Report of PCT application number PCT/US99/21170, a great-grandparent application of the above-identified application.

Applicants respectfully request that the above-cited documents be (1) fully considered by the Examiner during the course of the examination of this application and (2) printed on any patent issuing from this application. Applicants also request that a copy of the enclosed Form PTO-1449, duly initialed by the Examiner, be forwarded to the undersigned with the next official communication.

Applicants request favorable action in this application.

James F. Haley, Jr. (Reg. No. 27,794)

Attorney for Applicants

Stanley D. Liang (Reg. No. 43,753)

Agent for Applicants

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[ATTY. DOCKET NO. A061CIP2	SERIAL NO. 10/086,217
	APPLICANT Gregory R. Mundy and Toshiyuki Yoneda	CONFIRMATION NO. 5114 RECEIVE
	FILING DATE February 21, 2002	GROUP 1644 JUL 1 1 2002

		ITS		TECH CENTER 1600/2900		
EXAMINER	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	
INITIAL	5,510,332	4/23/96	Kogan et al.	514	14	July 7, 1994
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FOREIGN PATENT DOCUMENTS

		FOREIGN F	ATENT DOCUM	MENTS		TRANSL	ATION
EXAMINER	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	YES	NO
INITIAL	WO 99/61421	12/2/99	PCT	C07D	207/16		
	WO 00/15247	3/23/00	PCT	A61K	38/17		
	WO 01/12186	2/22/01	PCT	A61K	31/40		<u> </u>
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SERIAL NO. ATTY. DOCKET NO. 10/086,217 A061CIP2 CONFIRMATION NO. **APPLICANT** 5114 Gregory R. Mundy and RECEIVED Toshiyuki Yoneda GROUP **FILING DATE** 1644

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EXAMINER INITIAL Masellis-Smith et al. "Adhesion of Multiple Myeloma Peripheral B Cells to Bone Marrow Fibroblasts: A Requirement for CD44 and α,β,", Cancer Research 57(5): 930-936 (1997). Roodman GD "Mechanisms of Bone Lesions in Multiple Myeloma and Lymphoma", Database Medline 'Online!: US National Library of Medicine (NLM), Bethesda, MD, US, retrieved from STN, Database accession no. 1988026745, abstract. Roodman GD "Mechanisms of Bone Lesions in Multiple Myeloma and Lymphoma", Cancer 80 (8 Suppl): 1557-1563 (1997, Oct. 15). Akatsu et al. "Chinese Hamster Ovary Cells Expressing Alpha4beta1 Integrin Stimulate Osteoclast Formation In Vitro", Database BiOSIS Online!: Biosciences Information Service, Philadelphia, PA, US, (August 1998) Database accession no. PREV199800429141, abstract. Akatsu et al. "Chinese Hamster Ovary Cells Expressing α,β, Integrin Stimulate Osteoclast Formation In Vitro", Journal of Bone and Mineral Research 13 (8): 1251-1259 (1998). Michigami et al. "Interactions of Myeloma Cells with Bone Marrow Stromal Cells via Alpha4 Beta1 Integrin - VCAM-1 is required for the Development of Osteolysis", Database SCISEARCH 'Online! retrieved from STN, Database accession no. 684996. Michigami et al. "Interactions of Myeloma Cells with Bone Marrow Stromal Cells via α,β, Integrin - VCAM-1 is required for the Development of Osteolysis", Journal of Bone and Mineral Research 12 Supp. 1, p. 8128, Abstract 104 (1997). Mori et al. "Anti-α Integrin Antibody Suppresses the Bone Disease of Myeloma and Disrupts Myeloma-marrow Stromal Cell Interactions", Journal of Bone and Mineral Research 14 Supp. 1, p. 8173, Abstract 1161 (1999).		
Masellis-Smith et al. "Adhesion of Multiple Myeloma Peripheral B Cells to Bone Marrow Fibroblasts: A Requirement for CD44 and α ₄ β ₇ ", Cancer Research 57(5): 930-936 (1997). Roodman GD "Mechanisms of Bone Lesions in Multiple Myeloma and Lymphoma", Database Medline 'Online!: US National Library of Medicine (NLM), Bethesda, MD, US, retrieved from STN, Database accession no. 1998026745, abstract. Roodman GD "Mechanisms of Bone Lesions in Multiple Myeloma and Lymphoma", Cancer 80 (8 Suppl): 1557-1563 (1997, Oct. 15). Akatsu et al. "Chinese Hamster Ovary Cells Expressing Alpha4beta1 Integrin Stimulate Osteoclast Formation In Vitro", Database BIOSIS 'Online!: Biosciences Information Service, Philadelphia, PA, US, (August 1998) Database accession no. PREV199800429141, abstract. Akatsu et al. "Chinese Hamster Ovary Cells Expressing α ₄ β ₁ Integrin Stimulate Osteoclast Formation In Vitro", Journal of Bone and Mineral Research 13 (8): 1251-1259 (1998). Michigami et al. "Interactions of Myeloma Cells with Bone Marrow Stromal Cells via Alpha4 Beta1 Integrin - VCAM-1 is required for the Development of Osteolysis", Database SCISEARCH 'Online!, retrieved from STN, Database accession no. 684996. Michigami et al. "Interactions of Myeloma Cells with Bone Marrow Stromal Cells via α ₄ β ₁ Integrin - VCAM-1 is required for the Development of Osteolysis", Journal of Bone and Mineral Research 12 Supp. 1, p.S128, Abstract 104 (1997). Mori et al. "Anti-α4 Integrin Antibody Suppresses the Bone Disease of Myeloma and Disrupts Myeloma—marrow Stromal Cell Interactions", Journal of Bone and Mineral Research 14 Supp. 1, p.		OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.) TECH CENTER 16
 Masellis-Smith et al. "Adhesion of Multiple Myeloma Peripheral B Cells to Bone Martow Floroblasts." (Requirement for CD44 and α₄β₇", Cancer Research 57(5): 930-936 (1997). Roodman GD "Mechanisms of Bone Lesions in Multiple Myeloma and Lymphoma", Database Medline 'Online!: US National Library of Medicine (NLM), Bethesda, MD, US, retrieved from STN, Database accession no. 1998026745, abstract. Roodman GD "Mechanisms of Bone Lesions in Multiple Myeloma and Lymphoma", Cancer 80 (8 Suppl): 1557-1563 (1997, Oct. 15). Akatsu et al. "Chinese Hamster Ovary Cells Expressing Alpha4beta1 Integrin Stimulate Osteoclast Formation In Vitro", Database BIOSIS 'Online!: Biosciences Information Service, Philadelphia, PA, US, (August 1998) Database accession no. PREV199800429141, abstract. Akatsu et al. "Chinese Hamster Ovary Cells Expressing α₄β₄, Integrin Stimulate Osteoclast Formation In Vitro", Journal of Bone and Mineral Research 13 (8): 1251-1259 (1998). Michigami et al. "Interactions of Myeloma Cells with Bone Marrow Stromal Cells via Alpha4 Beta1 Integrin - VCAM-1 is required for the Development of Osteolysis", Database SCISEARCH 'Online!, retrieved from STN, Database accession no. 684996. Michigami et al. "Interactions of Myeloma Cells with Bone Marrow Stromal Cells via α₄β₄, Integrin - VCAM-1 is required for the Development of Osteolysis", Journal of Bone and Mineral Research 12 Supp. 1, p. S128, Abstract 104 (1997). Mori et al. "Anti-α4 Integrin Antibody Suppresses the Bone Disease of Myeloma and Disrupts Myeloma-marrow Stromal Cell Interactions", Journal of Bone and Mineral Research 14 Supp. 1, p. 	_	
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Roodman GD "Mechanisms of Bone Lesions in Multiple Myeloma and Lymphoma", Cancer 60 (6 Suppl): 1557-1563 (1997, Oct. 15). Akatsu et al. "Chinese Hamster Ovary Cells Expressing Alpha4beta1 Integrin Stimulate Osteoclast Formation In Vitro", Database BIOSIS 'Online!: Biosciences Information Service, Philadelphia, PA, US, (August 1998) Database accession no. PREV199800429141, abstract. Akatsu et al. "Chinese Hamster Ovary Cells Expressing α ₄ β₁ Integrin Stimulate Osteoclast Formation In Vitro", Journal of Bone and Mineral Research 13 (8): 1251-1259 (1998). Michigami et al. "Interactions of Myeloma Cells with Bone Marrow Stromal Cells via Alpha4 Beta1 Integrin - VCAM-1 is required for the Development of Osteolysis", Database SCISEARCH 'Online!, retrieved from STN, Database accession no. 684996. Michigami et al. "Interactions of Myeloma Cells with Bone Marrow Stromal Cells via α ₄ β₁ Integrin - VCAM-1 is required for the Development of Osteolysis", Journal of Bone and Mineral Research 12 Supp. 1, p.S128, Abstract 104 (1997). Mori et al. "Anti-α4 Integrin Antibody Suppresses the Bone Disease of Myeloma and Disrupts Myeloma-marrow Stromal Cell Interactions", Journal of Bone and Mineral Research 14 Supp. 1, p.		Roodman GD "Mechanisms of Bone Lesions in Multiple Myeloma and Lymphorna", <u>Database Medime</u> 'Online!: US National Library of Medicine (NLM), Bethesda, MD, US, retrieved from STN, Database
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 Akatsu et al. "Chinese Hamster Ovary Cells Expressing α₄β₁ Integrin Stimulate Osteoclast Formation in Vitro", Journal of Bone and Mineral Research 13 (8): 1251-1259 (1998). Michigami et al. "Interactions of Myeloma Cells with Bone Marrow Stromal Cells via Alpha4 Beta1 Integrin - VCAM-1 is required for the Development of Osteolysis", Database SCISEARCH 'Online!, retrieved from STN, Database accession no. 684996. Michigami et al. "Interactions of Myeloma Cells with Bone Marrow Stromal Cells via α₄β₁ Integrin - VCAM-1 is required for the Development of Osteolysis", Journal of Bone and Mineral Research 12 Supp. 1, p.S128, Abstract 104 (1997). Mori et al. "Anti-α4 Integrin Antibody Suppresses the Bone Disease of Myeloma and Disrupts Myeloma-marrow Stromal Cell Interactions", Journal of Bone and Mineral Research 14 Supp. 1, p. 		Akatsu et al. "Chinese Hamster Ovary Cells Expressing Alpha4beta1 Integrin Stimulate Osteoclast Formation In Vitro", <u>Database BIOSIS 'Online!</u> : <u>Biosciences Information Service</u> , <u>Philadelphia</u> , <u>PA</u> , <u>US</u> , 1008) <u>Patabase accession no.</u> <u>PREV199800429141</u> , abstract.
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